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kind is a tool for running local Kubernetes clusters using Docker container nodes. kind was primarily designed for testing Kubernetes itself, but may be used for local development or CI. Follow these instructions to prepare a kind cluster for Istio installation.

Prerequisites

- Please use the latest Go version.
- To use kind, you will also need to install docker.
- Install the latest version of kind.
- Increase Docker's memory limit.

Installation steps

1. Create a cluster with the following command:

   ```
   $ kind create cluster --name istio-testing
   ```

   `--name` is used to assign a specific name to the cluster. By default, the cluster will be given the name `kind`.

2. To see the list of kind clusters, use the following command:

```
$ kind get clusters
istio-testing
```

3. To list the local Kubernetes contexts, use the following command.

```
$ kubectl config get-contexts
CURRENT   NAME                  CLUSTER
     AUTHINFO             NAMESPACE
*         kind-istio-testing   kind-istio-testi
ng   kind-istio-testing
          minikube             minikube
     minikube
```

`kind` is prefixed to the context and cluster names, for example: `kind-istio-testing`

4. If you run multiple clusters, you need to choose which cluster `kubectl` talks to. You can set a default cluster for `kubectl` by setting the current context in the

Kubernetes kubeconfig file. Additionally you can run following command to set the current context for `kubectl`.

```
$ kubectl config use-context kind-istio-testing
Switched to context "kind-istio-testing".
```

Once you are done setting up a kind cluster, you can proceed to install Istio on it.

5. When you are done experimenting and you want to delete the existing cluster, use the following command:

```
$ kind delete cluster --name istio-testing
Deleting cluster "istio-testing" ...
```

Setup Dashboard UI for kind

kind does not have a built in Dashboard UI like minikube. But you can still setup Dashboard, a web based Kubernetes UI, to view your cluster. Follow these instructions to setup Dashboard for kind.

1. To deploy Dashboard, run the following command:

```
$ kubectl apply -f https://raw.githubusercontent.com/kubernetes/dashboard/v2.1.0/aio/deploy/recommended.yaml
```

2. Verify that Dashboard is deployed and running.

```
$ kubectl get pod -n kubernetes-dashboard
NAME                                         READY   STATUS    RESTARTS   AGE
dashboard-metrics-scraper-76585494d8-zdb66   1/1     Running   0          39s
kubernetes-dashboard-b7ffbc8cb-zl8zg         1/1     Running   0          39s
```

3. Create a `ClusterRoleBinding` to provide

admin access to the newly created cluster.

```
$ kubectl create clusterrolebinding default-admin --clusterrole cluster-admin --serviceaccount=default:default
```

4. To login to Dashboard, you need a Bearer Token. Use the following command to store the token in a variable.

```
$ token=$(kubectl get secrets -o jsonpath="{.items[?(@.metadata.annotations['kubernetes\.io/service-account\.name']=='default')].data.token}"|base64 --decode)
```

Display the token using the `echo` command and copy it to use for logging into Dashboard.

```
$ echo $token
```

5. You can Access Dashboard using the

kubectl command-line tool by running the following command:

```
$ kubectl proxy
Starting to serve on 127.0.0.1:8001
```

Click Kubernetes Dashboard to view your deployments and services.

You have to save your token somewhere, otherwise you have to run step number 4 everytime you need a token to login to your Dashboard.